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REORGANIZATION

As one of the results of major changes in the structure of the Department, announced by Secretary Wallace on October 6, the work of the Bureau of Agricultural Engineering and the Bureau of Chemistry and Soils (with the exceptions of the Soil Survey and other soils work) is being integrated under the leadership of Dr. H. G. Knight now Chief of Chemistry and Soils. In addition Dr. Knight has been directed to administer the regional research laboratories provided for by the last Congress to enable the Department to expand its research into new scientific, chemical, technical and industrial uses for farm commodities.

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: Because important organization changes are :
: likely to disturb the peace of mind of many people, :
: Dr. Knight has asked that the Monthly News Letters of the :
: two Bureaus^{to} be integrated - Chemistry and Soils and :
: Agricultural Engineering - inform the employees of the :
: Bureaus that he "particularly desires that they be :
: assured that the reorganization does not involve curtail- :
: ment in personnel and that they need not worry concern- :
: ing the security of their employment by reason of the :
: reorganization". :
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Secretary Wallace's memorandum on the reorganization included the following statement dealing with technological and engineering research:

"In addition to its adjustment, conservation, and marketing programs, the Department is vitally concerned with discovering and developing new uses for agricultural products and by-products. In this field the Department has achieved an enviable record as one of the world's outstanding research institutions. Initially modest appropriations have been increased in recent years, and the last Congress provided for a most significant expansion in this work by authorizing establishment of four regional laboratories, one in each major farm producing area.

"At these regional laboratories the Department will greatly expand its research into new scientific, chemical, technical, and industrial uses for farm commodities and their products and byproducts. It will also seek to develop new and extended markets and outlets for these farm commodities and their by-products. Much of the work heretofore done has been carried on in the Bureau of Chemistry and Soils. I am assigning the principal operating functions of the four regional laboratories to Dr. Henry G. Knight, Chief of the Bureau of Chemistry and Soils. Dr. Knight is also being placed in charge of the task of integrating the work of the Bureau of Chemistry and Soils (except soils research as discussed elsewhere in this memorandum) with the work of the Bureau of Agricultural Engineering. Thus closely related activities in the field of agricultural technology and engineering will be given unified direction".

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J. W. Randolph who is now studying harvesting operations in the production of sweet potatoes for starch purposes at Laurel, Miss., finds that the various methods used differ materially as to the quantity harvested per day, the field losses, and rotting which results from mechanical injury. In addition to determining the most advantageous methods of harvesting, there is apparently need for the development of a systematic procedure in harvesting and delivering sweet potatoes throughout the entire area served by a starch plant.

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E. D. Gordon left Auburn, Ala., on September 29 to make a preliminary study of the problems involved in the mechanical windrowing and harvesting of sugarcane in Louisiana. Mr. Gordon has inspected several experimental harvesters and has conferred with various men connected with sugarcane production. The immediate objective is to study the various factors involved in harvesting sugarcane which will serve as a basis for outlining a definite research program on harvesting equipment.

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Dr. S. Cecil Salmon, in charge of the weed investigations for the Bureau of Plant Industry, recently visited Utah, where he saw some of the work being done by our Bureau on weed investigations. On an inspection trip through several Utah counties, he accompanied Dr. Evans, head of the agronomy and soils department of the Utah Agricultural Experiment Station, and E. M. Dieffenbach of our Bureau.

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After making several improvements on the Scott-Viner sugar beet harvester, tests were again made with the machine on three different soil types in the Davis, Calif., area ranging from a heavy sediment to peat. The work of the machine, particularly its ability to pick up the beets out of the row and to go through weedy patches without clogging up, was considerably improved. Under favorable conditions over 98 percent of the beets were lifted from the rows. Because of the variability of beets and tops, the topping job was somewhat less effective as only 90 to 95 percent of the beets were acceptably topped.

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A. T. Mitchelson and Harry F. Blaney represented the Division of Irrigation at the Pacific Southwest Planning Conference called at Santa Barbara, Calif. by the National Resources Committee.

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In connection with preliminary work on the cooperative study of irrigation in relation to erosion, M. R. Lewis reports that in an irrigation demonstration field, in spite of almost continuous irrigation in "down-slope" furrows, the average moisture content of the upper two feet of soil in a potato field had gradually dropped since mid-July. On the other hand, the same quantity of water applied to contour furrows during slightly less time had maintained the soil moisture, because of less surface waste. Mr. Lewis reported also that he found an apple orchard with a grass and alfalfa cover crop irrigated with small furrows directly down the slope, where very little erosion was evident on slopes up to 48 percent. On the other hand, an orchard with only annual weeds showed serious erosion on a 12 percent slope. The first was supplied from underground pipe and well controlled outlets, the other from open earth ditch with poor control.

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Upon request of W. W. McLaughlin, Mr. Lewis attended a 2-day meeting of the Water Facilities Board at Portland, Oreg., where various drainage basins in the States of Idaho, Oregon, Washington, and Montana were considered.

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Harry G. Nickle, upon request of the chairman of the Texas Board of Water Engineers, was present during the first four days of the hearing of the State Senate Investigating Committee on the floods of the Colorado River of Texas in July and August. Mr. Nickle's attendance was desired in case some question should arise regarding silt, which subject he has been studying for the past several years. Prior to the hearing, Mr. Nickle had assisted the Board in preparing discharge data and hydrographs pertaining to the flood for three sampling stations on the Colorado River and in calculating silt percentages, silt load per second, and total silt at these stations during the recent flood, and also during the 1936 flood.

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Under the leadership of Paul A. Ewing and Harry F. Blaney, work was begun on the survey of agricultural conditions in San Fernando Valley, Calif. In cooperation with the Los Angeles Bureau of Water Works and Supply and the Los Angeles County Farm Bureau, plans for the survey were decided upon. Mr. Ewing and D. W. Bloodgood made a trip through the valley, interviewing cooperators and inspecting agricultural areas. A tract of 32 acres just below the Lower San Fernando reservoir has been set aside by the Los Angeles Water Department for use by the Division of Irrigation for experimental purposes, and asparagus plants formerly grown on the tract are being eradicated. Fences and concrete pipe lines will be constructed and the land will be leveled. At the Upper San Fernando reservoir, a concrete pipe line has been installed and other structures will be started soon. About 25 acres of rich land has been set aside for experimental studies at this location and more land is available if necessary.

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In the study of irrigation possibilities in North and South Dakota, Dean C. Muckel spent a day with the W.P.A. District Engineer inspecting small dams in Dewey County, S. D., where heavy rains of the previous week had filled most of the reservoirs and damaged some of the dams by overtopping. He assisted the W.P.A. in testing wells in the Timber Lake area. Mr. Muckel also inspected a proposed irrigation project northeast of Herried on Spring Creek, which the Farm Security Administration was considering for experimental purposes, the plan being to pump from pools in the creek, reportedly fed by springs. A day was spent at Usta, South Dakota, where a recently installed pump and irrigation ditches on a newly established irrigation project were tried out. Representatives of the Soil Conservation Service and about 40 people from neighboring farms were present. Assistance was rendered to farmers in staking out irrigation ditches, and suggesting planting systems for irrigated crops. Rains of 4 to 5 inches early in September made further irrigation unnecessary this season. Mr. Muckel spent two days in North Dakota, visiting the irrigation projects on which arrangements for duty of water studies had been made.

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R. L. Parshall made an examination of the Sheep Creek Ditch of the Pathfinder Irrigation District, Nebr., to determine the possibilities of installing a riffle-deflector, vortex-tube sand trap in this channel. As it had been necessary to clean the canal with a drag line twice this season, the manager was anxious to take steps to improve its present condition. A 100 pound sample of the very fine sand carried in the ditch was obtained by Mr. Parshall and tested at the Bellvue, Colo. laboratory, where it was found that under different velocities, the range of recovery by means of the sand trap was from 35 to 65 percent. Mr. Parshall is preparing a suggested design of a riffle-deflector sand trap for this channel, based on his experience with the model now in operation at the Bellvue laboratory, and it is hoped this structure will trap about half the sand in the water. Plans were also prepared for a 15-foot reinforced concrete Parshall measuring flume for the inlet channel to Lake Alice, in the Pathfinder District. The capacity of this flume will be 1,000 second-feet.

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In preparation for the hearings on the Kootenai River Project, to be held before the International Joint Commission October 10-13, L. T. Jessup prepared maps of cropped areas, and wet areas, also various relation curves such as relation of yield to depth of water table and rates of evapo-transpiration.

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J. C. Marr prepared text material for a Snow Cover Survey Manual. R. L. Parshall located several new snow courses, relocated others, and inspected about 25 courses in Colorado. R. A. Work inspected, cleared, and marked snow courses in the Umatilla, Wallowa, and Whitman National forests. Following a conference held at Baker, Oreg., attended by representatives of the principal agencies cooperating in the snow survey

work, three additional snow courses were located on the Grande Ronde, Powder and Burnt River watersheds. Paul A. Ewing, in conference with the Western Radio Program Director for the U. S. Department of Agriculture and officials of the National Broadcasting Company, made plans for initiating programs of winter sports information beginning December 16, and terminating April 29, 1939.

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J. T. Olsen left Sept. 17 to supervise a WPA Project in connection with the Mississippi State Planning Commission. He will investigate the present physical and financial status of the drainage districts in the State and make recommendations for their improvement. Mr. Olsen's headquarters are at Greenwood, Miss. Lewis A. Jones spent two weeks beginning Sept. 26 with Mr. Olsen in organizing the work.

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Plans for a reservoir for irrigation and fire protection and a lily pond were completed by F. E. Staebner for the Plant Industry Farm at Beltsville, Maryland, and for an irrigation system for the irrigation of iceberg lettuce at East Aurora, North Carolina. Mr. Staebner left Oct. 6 for New Orleans, Louisiana, to organize a WPA Project sponsored by this Bureau and the Weather Bureau. It is planned to compile rainfall records of areas in the eastern part of the United States which are deficient in rainfall in order to show the areas in which supplemental irrigation will be profitable.

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L. R. Hueper located and made a detailed topographic survey and map of the proposed site of the Bureau of Entomology and Plant Quarantine laboratory, at Oxford, North Carolina.

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A drainage conference of superintendents and engineers of the Illinois Drainage Camps was held at Camp D-5, Havana, Ill., on October 13, 14 and 15. Principal speakers addressing the group included: S. M. Lauderdale, CCC Safety Engineer from the Office of Director Fechner; Colonel Jos. A. Atkins, District Commander, Jefferson Barracks CCC District; John McLaren, Liaison Officer, Sixth Corps Area; Sanford Sellers, Jr., Educational Adviser, Sixth Corps Area, CCC; Professors E. W. Lehmann, G. W. Pickels and J. J. Pieper of the University of Illinois; and J. G. Sutton, District Engineer. Local drainage districts were well represented throughout the conference by approximately 40 engineers and commissioners. In joint session at Havana during the conference, commissioners representing Drainage Districts in west central Illinois, adopted a resolution presented to Mr. Sutton, through their Chairman, W. Y. Dow, of the Thompson Lake District, attesting to their appreciation of the assistance and efficient work rendered by the drainage camps in their districts.

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Central District drainage camps report the following work accomplished in September: 3,435,000 square yards of clearing; 1,390,000 cubic yards of excavation and embankment; 37,600 lineal feet of tile reconditioning; and 22,354 man days on structural and miscel-

aneous maintenance work. A total of \$78,000 was furnished by the drainage organizations during September.

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At the National Safety Council meeting in Chicago on October 11, Wallace Ashby presented a paper on Fire Protective Construction on the Farm. He visited the corn storage projects at Urbana and Ames, the potato storage project at Fargo, North Dakota, and the farmhouse remodeling work at Madison, Wisconsin.

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T. A. H. Miller visited Massachusetts and Connecticut to observe the storm damage to farm buildings. Most of Massachusetts and Connecticut were covered in company with W. C. Harrington of Massachusetts and H. E. Pinches of Connecticut. Data were collected which showed faulty construction in buildings which were damaged or destroyed by the hurricane. In many instances if the buildings had been properly anchored and the component parts securely fastened together there might have been less damage to the structures.

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W. P. Green returned from a trip with a shipment of citrus fruit from California to New York. Readings of temperatures and air velocities were made in cars employing various methods of icing. Mr. Green recently accepted a position in the Mechanical Engineering Department of the University of Maryland and took up his duties there October 17.

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Publications Issued:

Miscellaneous Publication 314. Overhead Cleaner-Drying Systems for Seed Cotton.